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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,894	02/13/2002	Rajinder S. Bharaj	H0002768	9313

128 7590 12/29/2003

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EXAMINER

PHAM, LEDA T

ART UNIT PAPER NUMBER

2834

DATE MAILED: 12/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,894

Applicant(s)

BHARAJ ET AL.

Examiner

Leda T. Pham

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2/13/03.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1 - 25 in Paper filed on 10/28/03 is acknowledged.
2. New drawing filed on 5/23/02 is acknowledged.
3. Since Applicant did not provide any traversal arguments to the restriction requirement, the response is considered as election without traverse; therefore, the election/restriction is made FINAL.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 12, 15, 20 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Umeda et al (U.S. Patent No. 5,955,810).

Regarding to claim 1, Umeda teaches a stator for a rotating electrical machine, comprising:

a stator core (41) having an outer circumferential surface and an opening therethrough that forms an inner circumferential surface;

at least two longitudinal slots (figure 8) formed in the inner circumferential surface of the stator core;

Art Unit: 2834

and at least one stator coil (90, figure 7) having a first slot-insertion segment (91) and a second slot-insertion segment (91) interposed by a non-slot-insertion segment (95), the first and second slot-insertion segments extending parallel to one another in a first plane and inserted, one each, within a separate slot (figure 8), the non-slot-insertion segment having a first non-twisted segment (95a) and a second non-twisted segment (95b) interposed by a twisted segment (92), wherein the twisted segment is twisted a predetermined number of degrees and includes at least a portion thereof that is bent at a predetermined angle relative to a second plane that is parallel to the first plane (figure 6).

Regarding to claim 12, Umeda teaches a rotating electrical machine (figure 4), comprising:

- a rotationally mounted rotor (30);

- and a stator surrounding the rotor (40), the stator including:

- a stator core (41) having an outer circumferential surface and an opening therethrough that forms an inner circumferential surface,

- at least two longitudinal slots (figure 8) formed in the inner circumferential surface of the stator core,

- at least one stator coil (90, figure 7) having a first slot-insertion segment and a second slot-insertion segment (91) interposed by a non-slot-insertion segment (95), the first and second slot-insertion segments extending parallel to one another in a first plane and inserted, One each, within a separate slot, the non-slot-insertion segment having a first non-twisted segment (95a) and a second non-twisted segment (95b) interposed by a twisted segment (92), wherein the twisted segment is twisted a predetermined number of degrees and includes at least a portion

Art Unit: 2834

thereof that is bent at a predetermined angle relative to a second plane that is parallel to the first plane (figure 6).

Regarding to claim 20, Umeda teaches a coil for insertion into a stator core (figure 7), comprising:

a first slot-insertion segment extending in a first plane (91);

a second slot-insertion segment extending parallel to the first slot-insertion segment in the first plane (91);

and a non-slot-insertion segment (95) coupled to the first and second slot-insertion segments together, the non-slot-insertion segment having a first non-twisted segment (95a) and a second non-twisted segment (95b) interposed by a twisted segment (92), wherein the twisted segment is twisted a predetermined number of degrees and includes at least a portion thereof that is bent at a predetermined angle relative to a second plane that is parallel to the first plane (figure 6).

Regarding to claims 4, 15 and 23, Umeda teaches the stator wherein the non-slot-insertion segment extends in a direction away from the first and second slot-insertion segments generally toward the outer circumference of the stator core (figure 11).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 – 3, 7 - 9, 13 – 14, 21 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umeda.

Regarding to claims 2, 7, 13 and 21, which recite the V-shape of the non-slot insertion segment. Umeda teaches the non-slot-insertion is U-shaped that can also see as a V-shaped. Thus, an artisan would have the necessary mechanical skills to change the shape of the non slot insertion segment from U-shaped to V-shaped without changing the function of the non slot insertion segment, it has held that a change in size or shape in generally recognized as being within the level of ordinary skill in the art. *In re Rose, 105 USPQ 237 (CCPA 1955)*.

Regarding to claims 3, 14, and 22, Umeda teaches the stator wherein the apex (92) is located on the twisted segment (figure 7).

Regarding to claim 8, Umeda teaches the stator wherein the non-slot-insertion segment (99) includes a first non-twisted segment (95a) and a second non-twisted segment (95b) interposed by the apex (92, figure 7).

Regarding to claim 9, Umeda teaches the stator wherein the non-slot-insertion segment extends in a direction away from the first and second slot-insertion segments generally toward the outer circumference of the stator core (figure 11).

5. Claims 5- 6, 10 –11, 16- 17, and 24 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umeda in view of Asao (U.S. Patent No. 6,525,443 B2).

Regarding to claims 5, 10, 16 and 24, Umeda teaches the claimed invention, except for the added limitation of the predetermined number of degrees of the twist is approximately 180 degree.

Asao teaches in his invention a dynamo-electric machine having non-slot insertion segments with a twist having ϕ angle degree (60 degrees). Thus, an artisan would have the necessary mechanical skills to select any degree of the twist angle for making the non slot insertion segments interposed the first and second slot insertion segment in a separate slot.

Therefore, it would have been obvious to one have ordinary skills in the art at the time the invention was made to modify the number of degree of the twist as taught by Asao. Doing so would separate the winding segment of stator coil in the slots. Also, it has held that a change in size or shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose, 105 USPQ 237 (CCPA 1955).*

Regarding to claims 6, 11, 17, and 25 Umeda teaches the claimed invention, except for the added limitation of the predetermined angle of the bend is approximately 45 degree.

Asao teaches in his invention a dynamo-electric machine having non-slot insertion segments with a non-twisted segment bending at an angle θ (32 degree, 27 degree). Thus, an artisan would have the necessary mechanical skills to select any degree to bent the non slot insertion segments for making the non slot insertion segments extending out from the stator core and continuing from a slot to others.

Therefore, it would have been obvious to one have ordinary skills in the art at the time the invention was made to bent the non slot insertion segment with a select angle as taught by Asao. Doing so would make the non-slot insertion segment extending out from the stator core and continuing from a slot to others. Also, it has held that a change in size or shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose, 105 USPQ 237 (CCPA 1955).*

Art Unit: 2834

6. Claims 18 –19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umeda as applied to claim 12 above, and further in view of Couture et al (U.S. Patent No. 5,714,824).

Regarding to claim 18 and 19, Umeda teaches the claimed invention, except for the added limitation of the machine is configured as a generator as recited in claim 18, and a motor as recited in claim 19.

Couture teaches a conductor section for a stator frame of a polyphase dynamoelectric machine that could be use for a generator or a motor to improve the stator size (line 7 –10, column 1).

Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to use the structure of the stator in a generator or a motor as taught by Couture. Doing so would improve the stator size in the rotating electric machine.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (703) 305-4864. The examiner can normally be reached on M-F (7:30-5:00) first Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

Leda T. Pham
Examiner
Art Unit 2834


Application/Control Number: 10/075,894

Art Unit: 2834

Page 8

LTP

December 15, 2003


BURTON S. MULLINS
PRIMARY EXAMINER